



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/567,567

02/08/2006

Tadaaki Kojima

Q81294

9333

23373 7590 11/09/2009
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

BAREFORD, KATHERINE A

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

11/09/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@SUGHRUE.COM
PPROCESSING@SUGHRUE.COM

Office Action Summary	Application No. 10/567,567	Applicant(s) KOJIMA ET AL.	
	Examiner Katherine A. Bareford	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 18-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 40-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/22/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment of September 4, 2009 has been received and entered. With the entry of the amendment, claims 18-39 are withdrawn from consideration, and claims 1-17 and 40-49 are pending for examination.

Election/Restrictions

1. Claims 18-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 14, 2009.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7, 13-17, 40, 42-45 and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 2, "dull" plating film is indefinite as to what is required for a plating film to be considered "dull" as opposed to "shiny", for example. Therefore, "dull" is a relative term which renders the claim indefinite. The term "dull" is not defined by the claim, the specification does not provide a standard for ascertaining the

requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 2, line 2, "dull" nickel plating film and "dull" nickel alloy plating film are indefinite for the same reasons as discussed with claim 1, line 2 above.

Claim 13, line 2, "dull" composite plating film is indefinite for the same reasons as discussed with claim 1, line 2 above.

Claim 14, line 2, "dull" plating film is indefinite for the same reasons as discussed with claim 1, line 2 above.

Claim 15, line 2, "dull" nickel composite plating film and "dull" composite nickel alloy plating film are indefinite for the same reasons as discussed with claim 1, line 2 above.

Claim 43, line 2, "dull" nickel plating film and "dull" nickel alloy plating film are indefinite for the same reasons as discussed with claim 1, line 2 above.

The other dependent claims do not cure the defects of the claims from which they depend.

4. In the amendment of September 4, 2009, applicant argue that a provided attached translation from what appears to be a plating technology handbook (not named in applicant's arguments) indicates that the expression "dull" would be a technical term of the art meaning "poor in brilliance." The Examiner has reviewed these arguments, however, the rejection is maintained. At best, this citation shows that "dull"

is a relative term that can be used in the art, however, the definition does not clarify the relative nature of the term – what would be “poor” in brilliance as opposed to average or brilliant? This is the exact problem with the term “dull” as noted above, and the translated citation does not provide sufficient clarity as to what the precise understanding of the term would be.

Claim Rejections - 35 USC § 102

5. The rejection of claims 1-12 under 35 U.S.C. 102(b) as being anticipated by Greeson et al (US 4511614) is withdrawn due to the additional requirements provided to the claims by the amendment of September 4, 2009.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-12, 40-41 and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greeson et al (US 4511614) in view of EITHER Ohmi et al (US 6258411) or Kashiwada et al (US 6280597).

Claims 1, 40: Greeson provides a method of producing a substrate with a black film. Column 1, lines 5-10. A "dull" plating film is formed on a surface of the substrate. Column 4, lines 30-50 and column 6, lines 55-65. An electroless plating film containing a sulfur compound is formed on the surface of the dull plating film. Column 5, lines 10-25 and column 6, line 65 through column 7, line 10 (note the inclusion of thiourea in the bath, providing a sulfur compound for the plating film; corresponding to the teaching of applicant at page 16, line 18 through page 17, line 10 of the present specification). Then a black film is formed on the surface of the electroless plating film. Column 5, lines 60-68 and column 7, lines 10-20.

Claims 2-4, 43: the "dull" plating film is a dull nickel alloy plating film in the form of a nickel-phosphorous alloy, formed by electroless plating. Column 6, lines 55-65.

Claims 5-6, 44: the electroless plating film is an electroless nickel alloy plating film in the form of a nickel-phosphorous alloy. Column 6, line 65 through column 7, line 10.

Claims 7, 45: the black film would be "mainly" comprising a nickel oxide, as the Examiner takes Official Notice that the nitric acid/nickel nitrate containing etchant solution that treats the electroless plating film would act to oxidize the nickel of this film, thus providing nickel oxide. Column 7, lines 10-20 (The Examiner notes that applicant indicates that a nitric acid/nickel nitrate solution will provide such oxidation -- see page 19, lines 3-9 of the specification).

Claims 8, 41: Greeson further provides that in the method of producing a substrate with a black film as discussed for claim 1 above, the substrate is further provided with asperities formed on at least part of the surface thereof. Column 3, lines 25-40 and column 6, lines 35-45. The electroless plating film is provided "on" this surface, as it is provided over the "dull" plating film. Column 7, lines 5-10. Figure 4 also indicates that there can be contact of the electroless plating layer with the substrate, see column 8, lines 5-35.

Claims 9, 46: the asperities can be provided by shot blasting (grit blasting) or etching the substrate. Column 3, lines 25-40.

Claims 10-11, 47: the electroless plating film is an electroless nickel alloy plating film in the form of a nickel-phosphorous alloy. Column 6, line 65 through column 7, line 10.

Claims 12, 48: the black film would be "mainly" comprising a nickel oxide, as the Examiner takes Official Notice that the nitric acid/nickel nitrate containing etchant solution that treats the electroless plating film would act to oxidize the nickel of this film, thus providing nickel oxide. Column 7, lines 10-20 (The Examiner notes that applicant indicates that a nitric acid/nickel nitrate solution will provide such oxidation -- see page 19, lines 3-9 of the specification).

Greeson teaches all the features of these claims except (1) subjecting the black film to a gas treatment with an inert gas (claims 1, 8) and (2) subjecting the black film to a passivation treatment with fluorine gas after the gas treatment (claims 40, 41).

However, Ohmi teaches that it is desired to provide an industrial article with a nickel electroless plating, such as a nickel-phosphorous electroless plating, with a further fluorine passivated film treatment to improve corrosion resistance. Column 2, lines 30-65 and column 4, lines 50-60. After the formation of the electroless plating film, the substrate is etched, then washed and baked in an inert gas such as nitrogen (inert gas treatment), the fluoridized by treatment with fluorine gas to form the fluorine passivated film. Column 5, lines 45-65.

Kashiwada teaches that it is desired to form fluorinated surface layers on metal films to increase corrosion resistance. Column 1, lines 15-20. The metal film can be an electroless plating layer of nickel-phosphorous plating, for example. Column 3, lines 30-50. The metal plating (column 6, lines 45-65) is treated with a first oxidation treatment, then treated with nitrogen (gas replacement, providing an inert gas treatment), then

Art Unit: 1792

treated with fluorine gas providing a fluorination passivating treatment (column 8, lines 1-20, for example).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Greeson to provide an inert gas treatment followed by fluorine gas treatment to the black film as suggested by EITHER Ohmi OR Kashiwada in order to provide a desirably corrosion resistant article, because Greeson teaches to provide an electroless nickel plating with nickel oxide layer (from the etching forming the black film) and Ohmi teaches that it would be desirable to form a fluorine passivating layer over an etched nickel electroless plating using an inert gas treatment followed by fluorine gas passivating treatment, and thus indicates that an etched surface such as in Greeson can also be desirably protected; and Kashiwada teaches that it would be desirable to form a fluorine passivating layer over an oxidized surface of an electroless nickel plating using inert gas treatment followed by fluorine gas passivating treatment, and thus indicates that an oxidized surface such as in Greeson can also be desirably protected.

9. Claims 13-17, 42 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greeson in view of EITHER Ohmi OR Kashiwada as applied to claims 1-12, 40-41 and 43-48 above, and further in view of EITHER Metzger et al (US 3753667) OR Itoh et al (US 5718745).

Greeson in view of EITHER Ohmi OR Kashiwada teaches all the features of these claims except that the "dull" underlying nickel-phosphorous alloy electrolessly plated coating is a composite coating that is obtained by co-depositing an electrically non-conducting particle with the nickel-phosphorous alloy.

However, Metzger teaches that when providing electroless nickel-phosphorous plating (column 3, lines 15-25 and 40-50), it is well known that electrically non-conducting particles (column 5, lines 35-55) can be co-deposited during the plating process (column 2, lines 30-40) to produce a desirably wear resistant coating (column 2, lines 40-55) to help control various features of the coating, including hardness, wear resistance, reflectivity, gloss, etc. (column 6, lines 35-55).

Itoh further teaches that when providing electroless nickel-phosphorous plating (column 6, line 55 through column 7, line 25 and column 2, lines 25-30), it is well known that electrically non-conducting particles (column 5, lines 5-20) can be co-deposited during the plating process (column 8, lines 55-68) to produce a coating with desirably controlled features, including hardness, wear-resistance, etc. (column 5, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Greeson in view of EITHER Ohmi OR Kashiwada to further provide that the "dull" underlying nickel-phosphorous alloy electrolessly plated coating is a composite coating that is obtained by co-depositing an electrically non-conducting particle with the nickel-phosphorous alloy as suggested by EITHER Metzger OR Itoh in order to provide coatings with desirably controlled hardness, wear-

resistance, etc. because Greeson in view of EITHER Ohmi OR Kashiwada provides an electrolessly plated layer of a nickel-phosphorous alloy, and both Metzger and Itoh provide that when electrolessly plating a layer of a nickel-phosphorous alloy, it is desirable to co-deposit electrically non-conducting particles with the nickel-phosphorous alloy in order to control hardness and wear-resistance, for example, of the resulting coating.

Response to Arguments

10. Applicant's arguments with respect to claims 1-17 and 40-49 have been considered but are moot in view of the new ground(s) of rejection.

The new references to Ohmi and Kashiwada have been provided as to the newly claimed features of inert gas treatment and fluorine gas passivation treatment as discussed in the rejections above.

Applicant refers to unexpected benefits from the inert gas/fluoride gas treatment to provide a film that has unexpectedly superior properties. However, the Examiner notes that Ohmi and Kashiwada as discussed in the rejection above both indicate that the inert gas/fluoride gas treatment will provide improved corrosion results, which is a reason for desiring this treatment, and thus one would expect improved results from the inert gas/fluoride gas treatment. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art

cannot be the basis for patentability when the differences would otherwise be obvious.

See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katherine A. Bareford/
Primary Examiner, Art Unit 1792